

# Documentation Sheet



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## Abstract

*Surface modeling of a typical manned space module is done by hybridizing a finite segment of right circular cylinder and a general paraboloid of revolution (GPOR) frustum. A transmitting source is placed inside the space module and test rays are launched from the transmitter. The rays are allowed to propagate inside the cavity. Unlike the available ray-tracing package, that use numerical search methods, a quasi-analytical ray-propagation model is developed to find out the ray-path details inside the cavity which involves the ray-launching, ray-bunching, and an adaptive cube for ray-reception.*